



Frankfurt School
UNEP Collaborating Centre
for Climate & Sustainable Energy Finance

The background of the page is a photograph of several wind turbines on a hillside. The scene is captured during a sunset or sunrise, with the sky transitioning from a deep blue at the top to a bright orange and yellow near the horizon. The sun is partially obscured by clouds, creating a dramatic, glowing effect. The wind turbines are silhouetted against the bright sky, with one turbine in the foreground being particularly prominent.

**CENTRE FOR
CLIMATE &
SUSTAINABLE
ENERGY
FINANCE**

COMBINING RESEARCH, POLICY ADVICE, EDUCATION & PROJECT IMPLEMENTATION

A think-and-do tank advancing the role of the private sector in climate change mitigation and adaptation.

OUR VISION

The vision of the Frankfurt School - UNEP Collaborating Centre for Climate & Sustainable Energy Finance (the Centre) is to advance transformation to resilient low-carbon and resource-efficient economies by attracting new types of investors, in particular catalysing the financing of clean energy by the private sector, which has a pivotal role to play. The Centre's work is designed to encourage and assist the finance community to scale-up cur-

Understanding what drives investors and financiers, and the barriers they face, is crucial to improving public-private interaction in climate finance. The Centre combines in-depth knowledge of financing markets, particularly in developing countries, with extensive skills for the design of appropriate financial mechanisms and contractual arrangements for financiers under local conditions. It acts as a moderator between the public and private sectors, developing and developed countries, high-level climate policy negotiators and

on-the-ground project developers, thereby bringing together the demand for financing with those able to supply it.

As a unique "think-and-do" tank combining research, education and project implementation, the Centre is in a position to combine academic know-how with practical project experience. This maximises lessons learnt, allowing developing countries to leapfrog from their current status to leading global solutions.

Located in the financial heart of Germany, the Centre serves as UNEP's main knowledge hub for sustainable energy and climate finance. It provides leadership in advancing policy-relevant knowledge about sustainable energy, climate finance and the private sector as a whole. Through publications and policy discussions, workshops, seminars, training sessions and conferences as well as a wide range of projects, the Centre promotes innovative solutions to climate and sustainable energy finance.



"THE CENTRE WORKS TO INCREASE THE ROLE OF PRIVATE INVESTORS AND FINANCIERS AND HELPS TO BRIDGE THE PRIVATE-PUBLIC DIVIDE. AS A THINK-AND-DO TANK, WE CAN DEVELOP AND IMPLEMENT INNOVATIVE CONCEPTS AND HAVE IMMEDIATE IMPACT."

Silvia Kreibiehl
Frankfurt School –
UNEP Collaborating Centre
Head of Centre

rent investment, or to take the first steps into new markets. A key part of this process is to enable the public sector to put in place policies, regulations and initiatives that overcome existing or perceived investment risks and other barriers seen by the private sector due to unfamiliarity with clean energy initiatives, particularly in developing countries. It aims to bring together demand and supply of climate financing by promoting smart financing structures and mechanisms.

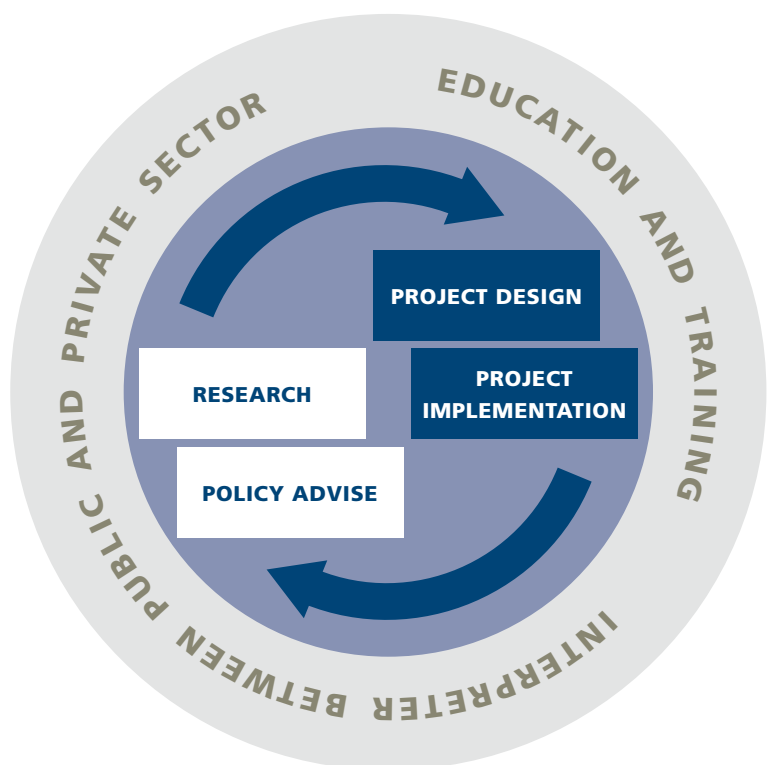
CENTRE FOR CLIMATE & SUSTAINABLE ENERGY FINANCE

Frankfurt School, UNEP and the BMU realise that global warming presents a fundamental challenge to mankind. Climate change already has an unmistakable impact on populations worldwide and will affect both global and local economies. The global consensus target of limiting global warming to 2°C above pre-industrialised levels requires a substantial structural change in economies, and these structural changes require investments along a low-carbon growth path. A lack of access to (reliable) energy presents a key barrier for economic development in many countries. In recognition to these needs, Frankfurt School and UNEP established the Centre with support from BMU.

The Centre combines project implementation on the ground with think-tank activities. Its work is cutting edge: the team of experts experiments with new financial mechanisms and implements cutting edge projects, informs policy development and changes the way the financial industry operates. The primary objective is to mobilise significantly increased levels of sustainable energy and climate finance, bridging the public-private sector gap and thereby contributing to the development of a global green economy. Together with partners in different institutions, the Centre is elaborating and field-testing new financial instruments, products and services that serve the growing markets

for energy efficient and clean energy production. By implementing and recording findings and instruments in the field where they are most effective, the Centre maximises its knowledge base to become a leading think-and-do tank.

In applying a continuum from research to project implementation, the Centre builds a knowledge



base that directly benefits its partners and the wider community. By combining advisory work with applied research and capacity building, we identify and multiply good practice in climate and sustainable energy finance.

A COLLABORATION TO FACILITATE CLIMATE AND SUSTAINABLE ENERGY FINANCE

The Frankfurt School – UNEP Collaborating Centre for Climate & Sustainable Energy Finance is a strategic cooperation between UNEP and Frankfurt School.



Frankfurt School of
Finance & Management
Bankakademie | HfB

Frankfurt School of Finance and Management (Frankfurt School) is a leading private business school based in Frankfurt am Main. In education, research and advisory Frankfurt School covers economics, management, finance and banking. With 50 members, its faculty is one of the leading economics faculties in Germany. Frankfurt School is part of a global network of about 100 partner universities and business schools. It hosts offices in Nairobi, Istanbul, Sao Paolo, Beijing and Pune.

The faculty offers professional and executive education as well as university degree programmes and has full degree awarding power. The Centre is a sister department of Frankfurt School's International Advisory Services (IAS) department. IAS experts manage consulting and training projects on finance in emerging and developing countries, disseminating sustainable international business practices through education, research, training and advisory services. IAS' mandate is to build up and strengthen institutional capacities in the financial sectors of these countries.



The United Nations Environment Programme (UNEP) is the designated authority of the United Nations system on environmental issues at the global and regional level. Its mandate is to coordinate

the development of environmental policy consensus by keeping the global environment under review and bringing emerging issues to the attention of governments and the international community for current and future action.

UNEP's mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing and enabling nations and peoples to improve their quality of life without compromising that of future generations.

Supporting low-carbon and climate-resilient development is at the core of UNEP's climate change priorities; indeed, UNEP's mandate charges it with assisting developing countries in the implementation of the environmental dimensions of sustainable development.

To this end, changing attitudes and helping to build awareness among financiers to consider climate-related and sustainable energy investments has been a focus for UNEP's past finance activities and is now a key element of the work undertaken by the Centre.

SETTING AN EXAMPLE IN RENEWABLE ENERGY AND ENERGY EFFICIENCY

The transformation of the global energy system is progressing though countless tasks still need to be addressed, presenting a challenge for many future generations.



Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is a key partner for the Centre. The Ministry's principal functions include climate policy issues, international cooperation in environmental policy, and informing and educating the public about environmental aspects. It acknowledges that climate change is a great global challenge which has to be overcome.

Climate protection and energy, and the related national and international level policy frameworks, have become key topics in the Ministry's

work. Germany is a driving force behind the international climate negotiation process. It is leading the way with ambitious emission reduction targets at the national level: it will reduce its emissions by 40% by 2020 as compared with 1990, irrespective of the efforts undertaken by other countries. This

makes sense for economic as well as climate policy reasons. Further, Germany tries to set high standards within this international negotiation process regarding mitigation targets and providing reliable and transparent climate finance.

Since the beginning of 2008, BMU has made around €1.1 billion available (inter alia from the sale of emissions allowances) to finance a new initiative. The International Climate Initiative (ICI) consists of more than 350 international projects in

“THE GLOBAL SHIFT TOWARDS RENEWABLE ENERGY IS BECOMING REALITY AND GERMANY IS ONE OF THE KEY PLAYERS IN FACILITATING THIS TRANSITION. THE BMU SUPPORTS PARTNERS LIKE THE FS - UNEP COLLABORATING CENTRE AS THEY SUPPORT THE REQUISITE INSTITUTIONAL FRAMEWORK, ENGAGE WITH PRIVATE SECTOR PARTNERS, AND PURSUE PRACTICAL PROJECTS WORLDWIDE.”

Norbert Gorißen
Head of Division: International Climate Finance, International Climate Initiative, BMU



the fields of mitigation, adaptation, REDD+ and biodiversity. The goal regarding mitigation to tap the high existing potential for reducing emissions in a cost-effective way and on a large scale and further to assist partner countries in switching to a sustainable, low-carbon economy.

THE CENTRE'S FIELDS OF ACTIVITY

A strong link between applied research, information dissemination and successful project implementation maximises the transformational effectiveness of the Centre's work.

RESEARCH/POLICY ADVICE

A key part of the Centre's research focuses on the consequences and impacts of policies and incentives on a macro scale – be it from carbon markets, feed-in-tariffs, policy-based financial incentives or the work of international institutions – for the investor's financing decision. By linking our research activities with actual projects we provide results not only of interest to the investor, but also to public policy.

GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT

The Global Trends in Renewable Energy Investment report (GTR) was first published by the Centre in 2011 and has since become one of its major flagships in the area of research. This annual report was produced previously under UNEP's Sustainable Energy Finance Initiative (SEFI). It grew out of efforts to track and publish comprehensive information about international investments

in renewable energy (RE) broken down by type of economy, technology, and investment.

The GTR provides deep views into trends in global investments in renewable power and fuels, as well as analysis specified in asset classes, technologies and geographic regions. The data is presented in the context of the political developments and the wider energy sector.



“EFFICIENT CLIMATE POLICY EVENTUALLY NEEDS TO TRIGGER APPROPRIATE INVESTMENT DECISIONS. POLICY DESIGN THEREFORE NEEDS TO UNDERSTAND PRIVATE SECTOR INVESTMENT DECISIONS.”

Ulf Moslener
Frankfurt School -
UNEP Collaborating Centre
Head of Research

Regular round table discussions will ensure that topics of interest will be discussed and turned into publications. The Centre enlarges and shares its knowledge base in fields where its findings are most required to facilitate transformation.

To access our research reports visit our website:
www.fs-unep-centre.org

The GTR is available for download on the Centre's website: www.fs-unep-centre.org

EDUCATION AND TRAINING

Knowledge transfer is a crucial part of our work.

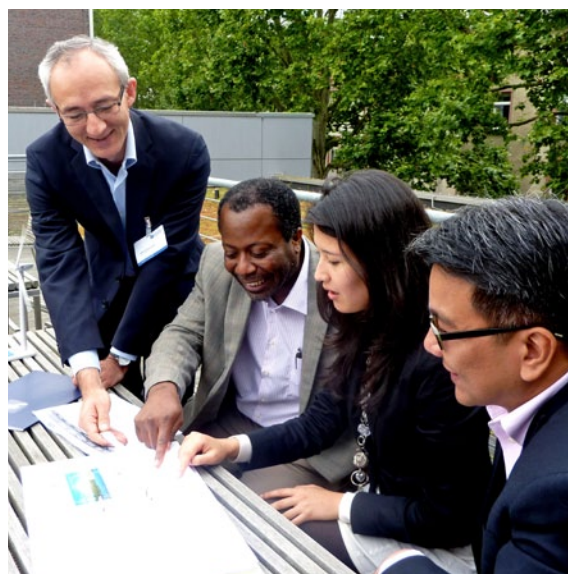
We offer:

- Tailor-made local and regional training and tools for financial institutions worldwide;
- Stakeholder consultations and workshops globally;
- Executive Education (local & regional Summer Academies, and two-year executive programmes);
- Specialised student courses within the Frankfurt School curriculum;
- Interactive learning through our E-learning platform.

Understanding the needs and restrictions of private sector financiers across the globe is crucial facilitating effective policy development. The Centre therefore also offers tailor-made training on private sector financing for policy makers worldwide.

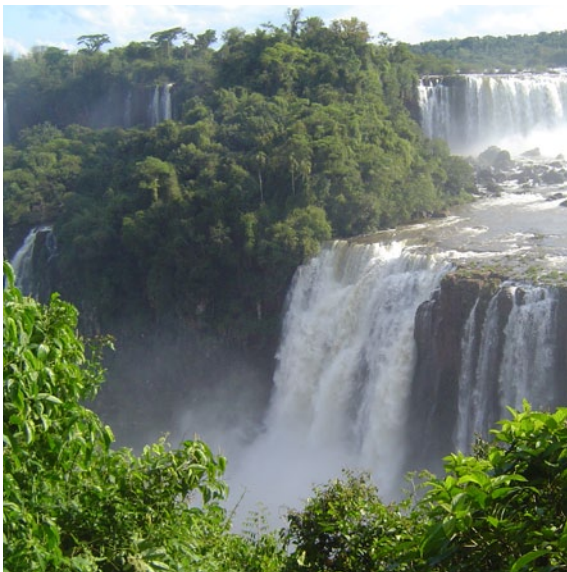
SUSTAINABLE ENERGY FINANCE SUMMER ACADEMY

The Sustainable Energy Finance Summer Academy (SEF SA) was first launched in 2010 by Frankfurt School. Recognising the financial sector's crucial role in integrating climate considerations and sustainability into their operations, the SEF SA has developed into the Centre's most established educational course.



Reaching out to international public and private sector practitioners, this 5-day training course offers a comprehensive framework on RE and energy efficiency (EE) financing projects. It delivers integrated knowledge through senior educators and practitioners that combine both academic-technical RE, EE and banking knowledge through a mix of lectures, discussions, and group work.

Based in Frankfurt am Main, the summer programme offers global best practices in the area of RE project development and financing. Realising the rising demand for climate friendly solutions in developing and transition countries, the Centre has also launched a SEF SA in Kenya with a strong regional focus on the African continent. This will serve as a pilot for further regional SAs on the Latin American and Asian continent.



E-LEARNING: CERTIFIED EXPERT IN CLIMATE & RENEWABLE ENERGY FINANCE

In today's rapidly changing world, it is of paramount importance for climate finance stakeholders to stay abreast of recent developments in the field, which usually requires a large investment of time for trainings. Often, classroom time competes with (and loses against!) job obligations or private engagements. For this reason, the newest addition to the Centre's training portfolio represents a comprehensive e-learning course, the "Certified Expert in Climate & Renewable Energy Finance".

The course comprises lectures on climate & RE finance, different RE technologies in the energy generation mix, environmental economics, project financing and international climate policy. The programme builds on Frankfurt School's development finance e-learning programme LinkED.

RENEWABLE ENERGY FINANCE CONFERENCE

The Renewable Energy Finance Conference is an annual event hosted by the Centre and the Frankfurt School Verlag. Its objective is to foster dialogue between economists, policy makers, project managers and banking experts on numerous topics in the field of clean energy. The conference offers presentations from well-known experts in the area and encourages professional discussions between presenters and the audience.

PROJECT IMPLEMENTATION

In addition to applying research results in the scope of the Centre's educational activity, our experts implement the findings from research into projects. These projects are largely targeted at financial institutions, but also at governments and the industry. Our team offers customised solutions for the specific areas in which our clients operate. In its project work, the Centre:

- Develops products for different business segments;
- Assists in incorporating new types of finance into their product lines;
- Builds financial awareness and capacity through on-site and targeted training courses in energy finance;
- Promotes innovative finance delivery channels;
- Provides technical assistance to manage local investment funds;
- Prepares market assessments of new markets or segments and feasibility studies for sustainable energy finance instruments in specific countries.

MOBILISING FINANCIAL FLOWS INTO CLIMATE CHANGE SOLUTIONS

The demand for financing varies by technology, region, application and many other factors. Finding the appropriate supply of financing and offering the right instruments to channel such financing is crucial.

SEED CAPITAL ASSISTANCE FACILITY

The Seed Capital Assistance Facility (SCAF) helps clean energy entrepreneurs access enterprise development support and early stage seed capital financing from commercial energy investors, in particular private equity funds. Entrepreneurs can transform markets, however the environment for entrepreneurship is poor in many developing countries, particularly in the energy sector. For new business ventures there is a lack of available entrepreneur support services; seed financing is hard to secure, with most investors reluctant to engage too early. Also, traditional infrastructure financiers require well developed – bankable – projects. Feasibility studies and early stage project development require financing which is often hard to access. This means that even high potential RE and RE sectors develop slowly. The two largest challenges that investors face in providing seed capital financing to early stage



projects and companies are the higher transaction costs and increased risks of these small, less mature business ventures. The SCAF facility is designed to address these two hurdles, offering clean energy investment funds two types of cost-sharing support for those willing to include a seed window within their overall investment strategy.

www.scaf-energy.org



MICROFINANCE FOR ECOSYSTEM-BASED ADAPTATION TO CLIMATE CHANGE

Microfinance for Ecosystem-based Adaptation to Climate Change (MEbA) aims to provide vulnerable local populations (smallholders, farmers and other stakeholders) in the Northern Tropical Andes of Peru and Colombia with access to finance. The project supports Ecosystem-based Adaptation (EbA) approaches by piloting and fostering the use of innovative microfinance instruments, by

partnering with microfinance institutions (MFIs), and by encouraging MFIs to include EbA-focused financial products in their portfolios.

The project links two traditionally unrelated areas of consideration and action: finance, and ecosystem-based strategies. It also seeks to identify opportunities and strategies to reduce investment risks for MFIs, to enhance their capacity to access and manage finance, to replicate EbA initiatives and to leverage additional funding.

NATIONAL CLIMATE FINANCE INSTITUTIONS SUPPORT PROGRAMME

Developing countries are exploring ways to access and manage finance for climate mitigation and adaptation activities via emerging funding channels. With the country-driven approach in mind, some of these countries are already establishing or operating “national funding entities” and institutions to address finance needs with the objective of mobilising private investment. The National Climate Finance Institutions Support Programme (NCFISP) provides an experience and information exchange for the purpose of helping domestic financial actors build institutional capacities and skills to be able to facilitate increased investment in climate mitigation and adaptation activities.

The programme also provides national climate finance institutions in the very early stages of development with capacity-building support in the form of technical assistance and training.

<http://ncfisp.fs-unep-centre.org>

RENEWABLE ENERGY PERFORMANCE PLATFORM

Across sub-Saharan Africa governments have been working to create the conditions for private sector investment in the RE and EE sectors. However, even as dedicated policies such as feed-in tariffs are enacted, the economics of early projects remain questionable due to a series of hurdles that the private sector has difficulty to overcome on its own. Although the effectiveness of medium-scale RE generation assets is recognised, risk mitigation instruments are in many cases available for large projects only.

The Centre is assessing the potential for the Renewable Energy Performance Platform (REPP), a new facility aimed at helping governments and the private sector overcome investment hurdles for first mover projects operating within newly supportive policy environments. Through this work the Centre is working closely with European Investment Bank (EIB), UNEP and the Kreditanstalt für Wiederaufbau (KfW) to identify existing risk mitigation and support instruments which could be made available to medium-sized projects. New instruments are structured in case established instruments are not sufficient.

END-USER FINANCE FOR ACCESS TO CLEAN ENERGY TECHNOLOGIES

Access to modern, clean energy is essential to improve overall living conditions. However, many rural Southeast Asian households cannot afford to purchase clean energy technologies. While financing is generally needed, many financial institutions have not yet realised these new credit opportunities.

The FACET project aims at stimulating and scaling up domestic bank lending to end-users of small-scale clean energy technologies, thereby creating access to energy and reducing greenhouse gas emissions. The project is implementing at least two national programmes intended to mobilise funding for end-users of small-scale technologies such as biogas and solar systems. Though clean energy technologies are available, their uptake is constrained by high capital costs and a lack of financing options. To overcome these obstacles FACET's country schemes combine technical assistance with a temporary financial support mechanism for end users.

“BY BUILDING THE SKILLS AND AWARENESS OF POTENTIAL CLIMATE FINANCIERS, AND DEMONSTRATING THE INVESTMENT OPPORTUNITIES FROM SUSTAINABLE ENERGY FINANCE, ESPECIALLY IN DEVELOPING COUNTRIES, THE FS - UNEP COLLABORATING CENTRE HELPS US TO SCALE-UP THE LEVEL OF GLOBAL INVESTMENT INTO CLEAN TECHNOLOGY APPLICATIONS.”

Sylvie Lemmet,
Director, DTIE, UNEP



CLIMATE FINANCE INNOVATION FACILITY

The Climate Finance Innovation Facility (CFIF) supports finance-industry engagement in new climate sectors such as RE, EE and sustainable forestry. The Facility provides developing country financial institutions with technical assistance and funding for the development of climate focused financial products and services. A broad range of activities are eligible for support, ranging from feasibility studies, to market assessments and legal

reviews. The overall aim of CFIF is to help mobilise a scaling-up of financial flows into climate change solutions. More broadly, by encouraging early action within the finance community, the facility helps to cultivate on-the-ground leadership amongst financial actors that can have replication effects across markets and geographies. www.climate-finance.org



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